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combining democracy and creativity

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Selecting and evoking innovators: combining democracy and creativity

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ABSTRACT
The practical undertaking of selecting users to work as innovators and of evoking their creative potential is crucial, but underexposed in the literature on user involvement in design. This paper reports findings from a recent case of user-driven innovation, the FEEDBACK-project, where the authors prepared for and conducted selection of and collaboration with innovators. The outcome was successful in the sense that the innovators produced excellent foundation for conceptual interaction design by creating mock-ups and explanations incarnating their preferences, attitudes and habits. By referring to theories of learning we try to explain how our way of working with selection and evoking of innovators has contributed to this positive result and how our approach to user-driven innovation can be regarded as a way to combine democracy and creativity in design.

Author Keywords
User-driven innovation, selection and evoking processes, democracy, creativity, innovators, design-artifacts

ACM Classification Keywords
H.5.2. [Information Interfaces and Presentation]: User-centered Design.

INTRODUCTION
The 'user discourse' has, since the first steps to include users in the design process of information systems in the 1970s, gradually changed: from "victims" needing support in the 1970s [2] to "competent practitioners" in the 1980s [14], to "serious professionals" in the 1990s [34], to today's valuable "source of inspiration" [15]. These various discourses – all traceable within the Scandinavian tradition of Information Systems design, Participatory Design, and Interaction Design – can be regarded as an increase in user significance in design: from users as victims to users being an irreplaceable resource. As the application areas have broadened, users in it-design projects are becoming more and more important, as remarked by Margolin ten years ago: "the increasing number of tasks that products can manage prompts the designer to shift radically from the traditional focus on form to the more flexible relation between the product and the user" [31]. The designers' staging of the user-discourse has, however, remained unchanged, and the designers have kept the favorable role of game master, as discussed by researchers within Scandinavian Participatory it-design e.g. [3; 22; 29; 32]. Scandinavian and participatory it-design has for historical reasons developed a touch of phronesis [12; 21]. Recently, however, "business realities" has been introduced also to disciplines like Participatory Design as a way of getting "out of the lab" [4]. We want to contribute to a way of working where business realities and the flexible user-product relation are acknowledged without skipping the question of ownership: whose' life world is referred to, and whose language is spoken. We find these questions even more important now in the change towards a network economy where the user-producer and producer-consumer distinctions are increasingly blurred. Globalization and network economy is not doing away with power struggles. On the contrary, the more blurred the contours of power, the more important is it to address the power issue. On top of which the classical tradition-transcendence dilemma [11] still stands. Somehow the issues of life-world, language, and creativity are related to the question of democracy and learning.

Hence, we turn to Dewey [9], philosopher of experiential learning, who argues that the best democracy is a democracy which is constituted to maximize the common good, which of course makes determining what is the common good compulsory and crucial to the democratic constitution, and a meeting point between public and private/personal/individual. Dewey – rightly we think – maintained that democracy is the form of social life that opens the widest prospects for human development. Hence, there is good reason to seek meeting points, where public and private come together. User-driven innovation is such a

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meeting point, and designers working with this approach have the opportunity to combine democracy and creativity.

Despite the apparent interest in the outcome of public meeting private, designer meeting user, the issue of how to select participants who can innovate is somewhat overlooked. A recent paper on how to "identify and select users for user-centered design" [26] cast light on several selection methods and their problems. E.g. the problem of selecting users through management (often lead to low representatively and organizational conflicts), the problem of generic models (there is no such thing – the user is not known until the product is bought – which means that we can describe e.g. personas in details but we cannot identify representative users), the problem of using market segmentation (due to their focus on customers vs. users/marketability vs. usability). The last selection approach on these authors' list is "the lead user approach" developed by researchers within user-driven innovation [37]. This selection-approach has been proved "faster and cheaper at developing new product concepts than more conventional marketing research methods" [26]. The question, which remains unanswered, is, however, how to in practice select innovators. In this paper we present results from the FEEDBACK-project – a research project working with interaction design of on-line feedback of electricity consumption in private households based on user-driven innovation. The innovators participating in the project did come up with innovative ideas and input to conceptual prototypes, within a specified, narrow timeframe. We attribute this success to the way they were selected, and the way we worked with motivation in staging the co-operation. Consequently, we present i) how we have worked with co-operation inspired by user-driven innovation introducing the importance of methodological consideration when it comes to select and motivate users to be innovators in design projects, ii) reflect on why it worked by referring to theories of learning, and iii) how our way of working with co-operation combines democracy and creativity.

USER-DRIVEN INNOVATION – HISTORY & INSPIRATION

Historically, the term user-driven innovation originated in business research and literature, where "user" is often referred to as "customer", and "designer" as "supplier", and where focus is primarily on conditions for innovation (e.g. the right organizational culture, the right market premises, or the right national and global business conditions). In economic theory the concept of user-driven innovation has a history related to democracy and participation. The first reported case of user-driven innovation dates back to 1949, and presents the story of the British food manufacturing and catering company J. Lyons inventing the world's first business computer – LEO (Lyons Electronic Office) inspired by existing military systems found in the US and UK [28]. The concept 'user-driven innovation' is, however, related to C. Freeman, who in the 1960s used it as part of his theory of democratic production processes [13]. In the same period von Hippel presents the term "user dominated innovation" [16], making the same point as Freeman: users can play a valuable innovative role for product development. Consequently, these researchers suggest users to play a major role in product design processes. Von Hippel's ideas are today realized in developments of production processes, where users are given tool-kits and "real freedom to innovate" [17; 37].

Freeman's ideas have recently been proved even more important in relation to innovations in cyberspace [33], and in the business literature Jeppesen & Molin [19] present interesting research on gaming communities and the possibilities found in organizing user-driven innovation in virtual communities of users. This move of user-driven innovation to a community level is of course especially interesting in relation to co-operation in it-design in that it points out the value of co-operation among different types of users (the innovative users testing their innovations on other users in the community), and co-operation among users and designers (innovative users inspiring designers, and designers shaping and finalizing versions of users innovations) [19]. In their research Jeppesen & Molin point out key issues for design in co-operation with users. They describe how the game company they study has set a technical limit to what a user can do with an engine, a graphics structure, and an editor. That is a "firm-constructed design limit". The authors call this limit and the space that it creates for consumer innovation "the solution space", a term borrowed from von Hippel [17]. Both von Hippel and Jeppesen & Molin refer to a "space" closely related to a product. Innovations, which fall outside the suppliers (designers) own design space, are unlikely to become realized [19].

Focusing more on the design process, Thomke and von Hippel present an illustration of user-driven innovation compared to a traditional design process (fig. 1)

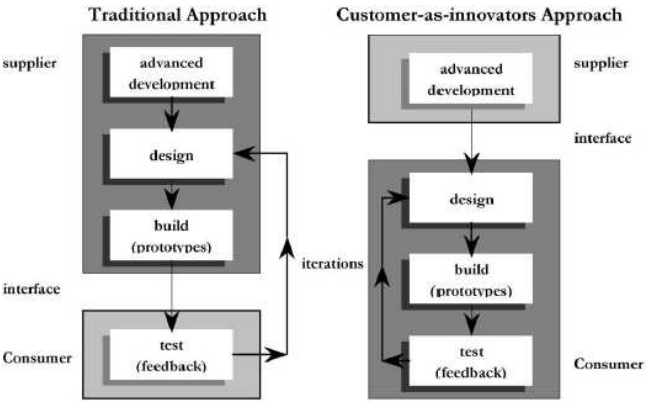

Fig. 1: User-driven innovation compared to the traditional approach for development [37].

Thomke & von Hippel show how suppliers (designers) traditionally take on most of the product development work, which according to the authors results in "costly and time

consuming iterations between supplier and customer to reach a satisfactory solution" (op.cit). As an alternative they present the "customers-as-innovators approach", where users design and develop parts or ideas for a product themselves, supported by suppliers' "tools" or "tool kits". This alternative user-driven process gives the users more design space, and as described by Thomke and von Hippel it also "shifts the location of the supplier-customer interface".

In our design efforts, we are inspired by the participatory design tradition in Scandinavia as well as by the ideas of user-driven innovation, the latter especially in emphasizing the importance of providing an innovation space, which can shift location between the innovators' and the designers' turf. To facilitate such shifts (and accommodate our design teaching as well) we have developed a mobile design lab 'Laboratory for User-driven Innovation' (LUI) – a mobile unit furnished with materials for mock-up production, and a tool kit for design activities. This mobile unit also serves as a signifier to mark that now we are in design mode, also when the location is an otherwise insignificant classroom. Similarly, our design process is a combination of inspiration from Scandinavian PD and user-driven innovation combining multiple iterations, e.g. [30], with early introduction of innovators in the design process.

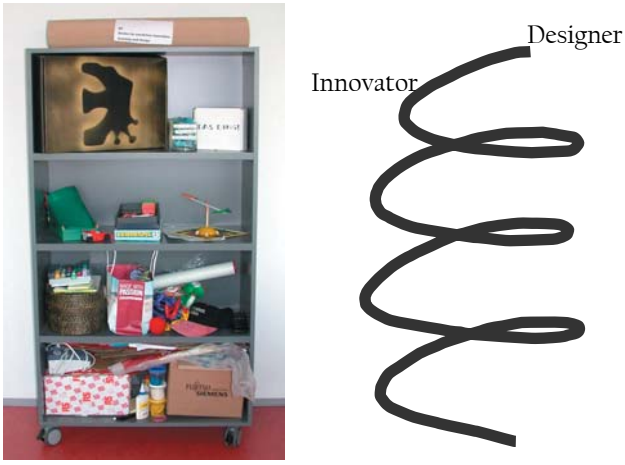

Fig. 2: LUI – our mobile rack with materials for design & a model of the shifts in location between designer and innovator in the course of design.

When we use the term 'innovator' we emphasize three aspects: 1) the scope of newness of the design, 2) the attitude of the designers towards technology in general, and 3) the division of labor between professional designer and user-designer. 'Our' innovators are probably not future users themselves. They are brought in, because they represent the web of relationships between user and product as quoted by Margolin. They represent a practice so rich, that the professional designers are not able themselves to determine the constellations of preferences, attitudes and habits that will eventually determine use. They represent the product context. They are also brought in to represent what in Rogers' adoption scale [35] is vast majority – not frontrunners but average, potential users with respect to general attitude towards technology. And finally are they brought in because they represent a break from the 'user as victim'-discourse, a rehabilitation of the user to equal footing with the professional designers, in a partnership of complementary capacities. Consequently, finding people with innovative potential is neither simple nor easy, which is why we have put an effort to methodological considerations on the process of selecting innovators who have the spirit of tweaking things in their environment without being nerdy.

In a similar vein, when we – inspired by colleagues at the Interactive Institute in Malmö e.g. [20] – use the term 'evoke' instead of e.g. 'involve' or 'participate', to address the process of bringing forward the innovators' 'tweaking energy', we acknowledge, that the complementary advantage of the innovators (that they represent context) is also their Achilles heel. Since the context is their everyday backdrop of conscious action, it is tacit to them. To work as innovators they need to become somewhat estranged to their everyday life, and they – since they are not professional in the design business, can only serve in the role as innovators within a specified and very limited timeframe. Therefore professional designers must help evoke innovators' creative energy. This process is not simple or easy either. An iterative design model and a rack filled with materials does not do the trick, but it helps – 'how' is presented in the second part of this paper. First we give a brief introduction to the FEEDBACK-project.

THE FEEDBACK-PROJECT – A CASE IN POINT

FEEDBACK motivated electricity saving in private households is a research project running from 2006-2007 involving universities (Aarhus Business School, Aalborg University, and the Danish Institute of local government studies) and business partners (software companies, hardware companies, and electricity suppliers). The explicit goal of the project is i) to develop and test out new concepts for communication from the electrical power industry to the end-users (feedback) and ii) to investigate whether on-line-feedback on electricity consumption results in energy saving. The project consists of three related sub-projects, one of which is the design of a user-interface for on-line feedback on electricity consumption. This part is based on user-driven innovation with eight families, in the spring of 2006 and managed by the authors. Prototypes are to be installed and tested in 120 Danish households in 2007 by other project partners.

The user-driven innovation process, now concluded, was organized as a design process in six steps, each step comprising

- *Co-operation*: focusing on establishing co-operation between designers and innovators.

- *Contextualization*: focusing on how to explore the use-context related to the design project.

- *Conceptualization*: focusing on developing and exploring concepts for interaction.

The issues of selecting and motivating innovators concerns the co-operation aspect, and our findings from the FEEDBACK-project on co-operation will be tested further in the MINI-project (running from 2006-2007), where the goal also is conceptual design of user-interfaces, this time for mobile e-learning solutions for physicians in clinical training.

SELECTING INNOVATORS – HOW

As described by Jeppesen & Molin users are not just users: "there are disparities between them in terms of their readiness, interest and capabilities" to innovate [20]. In this regard, finding innovative users for user-driven design processes becomes a challenge. In their study Jeppesen & Molin identify users who "develop innovative applications" as "innovators" as opposed to users, who use and experiment with products actively, and users who more passively use products [19].

In the FEEDBACK-project the selection of innovators was designed and conducted based on four sources:

- Thomke & Hippels criterias for innovators [37]
- Our own pilot study on what characterized innovators in terms of practical attitude towards technology
- a pilot study conducted by students as part of our graduate design teaching
- criteria of attitudes towards the product target: electricity consumption, derived from the consumer behavior literature

Thomke & von Hippel describe how the best prospects for user-driven innovation are *customers with needs, with engineering skills, and little experience with traditional development* [39], which emphasizes how innovation is not just about engineering skills (or "development of innovation" as described by Jeppesen & Molin), but also about motivation driven by needs, and about creativity best found where users are not "stuck" in too much experience and traditional thinking [37].

In order to be able to estimate the importance of Thomke & von Hippel's criteria for innovators (customers with needs, with engineering skills, and little experience with traditional development), we conducted a pilot study in the fall of 2005, of which we here give a quite extensive account in order to illustrate the actual complexity of identifying innovators. The pilot study investigated the innovative potential within a group of families comparable in age, profession, income, and attitude towards environmental issues like electricity consumption. All couples had newly moved (2-3 weeks before our visit) into high profile apartments, where the building company had offered them a discount on installation of IHC (Intelligent Home Control) as part of a research project conducted in a co-operation between a vendor of electricity controls, the building company, and the national building development board in Denmark. For the residents, the gain was cheap installation of a software package, a so called 'comfort' and 'control' system. The software was offered at three levels of complexity, and our informants had all chosen the basic package because of its low prize. None of the couples had fully unpacked their moving boxes at the time of our visit, and two of the three had not yet put up more than a few lamps, they had not determined where to place the TV, and were yet to locate their home office. So clearly they were in a pupal state, a transition, and we restricted our visits to from 1/3 to 3 hours, videotaping, while they showed us around and talked about the IHC installation. We asked them questions about IHC as a technology, the story of how they ended up deciding to buy this technology, and about their expectations of the technology once they were settled in their new environment. Analyzing our video-data, in line with Bødker [5], logging a. *operations* (where their hands go) b. *action* (how they talk about what they do and don't do), and c. *motive* (the underlying reference points with respect to what they want to do with the IHC technology) we found Jeppesen & Molin's observation that not all users are ready, capable and interested to innovate confirmed. The activity theoretical categories turned out to be a good analytic tool for identification of innovative potential. The interesting differences between the three couples can be summarized as follows:

- Couple no. 1: *Operations* characterized by pointing at the technology. *Actions* characterized by description of what they can do and excuses like "we have not got around to the technical yet". *Motive* characterized by what we have called the "sales speech" in that it tells about the advantages of the technology identical to the arguments found in the manual for the IHC system.

- Couple no. 2: *Operations* characterized by pointing. *Actions* characterized by descriptions of the limits of the system e.g. "in principle yes, but you cannot manage very much from here, in reality we can not connect TV, Internet, and phone". *Motivation* characterized by descriptions of what the modern family need, and how they are "not the target group": e.g. "we don't need to call our oven from work". This couple ridiculed some of the system's facilities like that you can program the plugs, so that you from the bedside can light up your walk to the bathroom: "the pee-route".

- Couple no. 3: *Operations* characterized by showing remote controls and pulling connectors. *Actions* characterized by descriptions of how they have set up the system using their intuition. *Motive* characterized by descriptions of their ideas of the future home, which the IHC system is to be an answer to e.g. "I would like to be

able to sit with my computer on the terrace", and "it has to be energy-efficient".

Couple no. 1, because of their lack of a repertoire of unconscious operations regarding the technology, and lack of engineering skills ("we have not got around to the technical yet") came out in sharp contrast to couple no. 2, who on the other hand lacked motivation ("we don't need to call our oven from work"). In Thomke & von Hippel's terminology couple no. 2 seemed "stuck" [37] with too much experience resulting in reflections on target groups and critiques of the system more than in new ideas. So both couple nr. 1 and couple no. 2 turned out not to be obvious partners for user-driven design events. In contrast couple no. 3 came out as good candidates, because of their repertoire of unconscious operations, which they displayed when explaining how they experimented with setting up the technology (pulling connectors, and using their own intuition), and because of their wealth of ideas of how to live in a future home and economize energy consumption coming out of own needs (not professional expertise e.g. "I would like to be able to sit with my computer on the terrace").

In the FEEDBACK-project we formed a screening-questionnaire in co-operation with our partners at the Aarhus School of Business, who had reviewed the consumer behavior literature on electricity consumption, and who are well versed in quantitative as well as in qualitative studies of consumer behavior. The outcome of our pre-study made us supply the attitude screening suggested by our Aarhus colleagues with questions aiming to determine innovative skills and interest by asking for the level of technical operational skill and motivation for technological change. The first part of the questionnaire asked the family to rate themselves in line with expressions such as "electricity saving is not a top priority in this family. Generally, it is not a concern in this family". In the next part we converted Thomke & von Hippel's criteria by asking the family to rate their reaction to participating in innovation, using a scale to help us find signs of innovative potential:

Imagine the following situation: the development of future homes is in rapid progress. Enterprises and researchers are working on design of new technology to the home. Your family is contacted by a researcher who asks, if you would like to participate in a research project. What is your answer?
We will most likely say no to participate. ☐
We will most likely say yes because we think that it could be fun and exiting. ☐
We will most likely say yes to participate because we would like to contribute with our thoughts and viewpoints on development of new technology in the home. ☐
We will most likely say yes to participate because we don't know so much about the subject, but like to participate and learn more about the subject. ☐
We will most likely say yes to participate because we would like to contribute with our ideas on development of technology for the home. ☐
We will most likely say yes to participate because we would like to help researchers and research in general. ☐

Fig. 3: Questions used to screen for innovativeness in the FEEDBACK-project

Following Thomke and von Hippel and the outcome of our pilot study, we tried to find people openly interested in technology, in learning, and not 'stuck' with too much experience on the subject. Respondents were selected innovators if responding 2 and 4.

The students, who in the autumn 2005 designed prototypes together with private households, contributed the experience that families with young children are very creative. To them the design activities were a playful, yet educating, thing to do together with the kids. Hence we in the FEEDBACK-project asked about and selected for family size and age, from both representative as innovative considerations.

Based on literature on qualitative inquiries [27] we decided to work with 8 families. The ambition was to send the screening questionnaire to minimum 20 families, which, however, turned out to be difficult – we succeeded in getting into positive contact with 12 families who filled in the questionnaire. The families were found through a snowball procedure, starting with chairmen of local branches from political parties across the political spectrum in Denmark. We chose members of political parties because of the product target, assuming that being a member of a political party means that you are interested in issues such as electricity consumption. Based on the screening procedure eight families were selected of which the six families had young kids. And we found the students' initial findings confirmed: there is a lot of design energy in families with young kids.

EVOKING USERS CREATIVITY – HOW

Once the innovators for the user-driven innovation activities are found, the second challenge is to wake their innovative potential. We call this 'evoking'. In the research literature on user participation, there is much inspiration for the practical staging of user activities. Research within the field of Participatory Design e.g. [4; 6; 7; 18; 20] have provided a lot of successful evidence for the use of artifacts to prompt creativity, and we have followed their route. In case of the FEEDBACK-project we were concerned about the inconspicuous, mundane nature of our design target, and how to facilitate our innovators coming-as-a-stranger to their everyday life. So, apart from relying on artifact-driven evocations, we trusted gaming and competition. As described earlier, the innovators' expertise and advantage

lies in knowing about everyday life with the product target, but here lies also a potential blindness. And since they are supposed to represent vast majority with respect to attitude towards technology adoption, they may not by any means see themselves as designers. On top of which, families are busy, and although they received a small treat in the end, our questionnaire showed that the innovators in the FEEDBACK-project were basically motivated by contributing to the good course of research and environmentally concerned behavior.

It is a bootstrapping-challenge to request people to design for something, which to them is silent, transparent and mundane such as consuming electricity. As emphasized by von Hippel, it is here important to "give users real freedom to innovate" and to develop "tool kits" from this perspective [17]. Our tool-kit and method for giving space and freedom is, as stated earlier, supported by our Laboratory for User-driven Innovation (LUI) – developed in order to give participants space to design and materials and activities to support creativity.

In the FEEDBACK-project the conceptual design space did unfold in a design spiral, presented in overview in figure 2 and in more detail in figure 4. At a glance the process presents the flow of activities from we began acquainting ourselves with the problem, the context, and the resources till we were ready to hand over specs for user-interface design to our project partners. In this paper our presentation of this process solely focuses on the lay out of design space: the co-operation between designers and innovators, because here lies the key to evoke design spirit of the innovators.

Locations	Partici-pants	Mediating setting and artifacts	Intended outcome
Lab = designers' turf	Designers	Problem-setting, where artifacts in use to be supplied /redesigned are in focus, and we try to learn from similar projects	A game to make innovators 'open up' and focus on electricity consumption, method for selection of innovators, plan for contact etc.
Field = innovators' turf	Designers and innovators	Innovators playing design games and taking and commenting on photos of where they want to know what about electricity consumption using a Polaroid camera, followed by negotiations and narratives saved on video	Videodata Polaroid photos
Lab	Designers	Exploration of videodata and notebook data, Polaroid photos, profiles and prototypes created	A family typology of four, comprising preferences, attitudes and habits Concept-prototypes/mock ups and a plan for who is going to have what; probing kits
Field	Innovators	The innovators try out the thought provoking prototypes in use, and reflect in probing kit	Innovators' notes from installation visits and from returned probing kit
Lab	Innovators and designers	Common ground, where innovators take the lead in reporting their experiences, and design their own best solution	Videodata and innovators' prototypes
Lab	Designers	Design of an interface concept inspired from analysis of workshop data	Conceptual design of interface for on-line feedback on electricity consumption

Fig. 4: The FEEDBACK-projects conceptual design space based on user driven innovation

What is important with respect to evoking innovators' potential as designers is, that co-operation has to be an issue through out the design spiral, a part of all interaction between innovators and designers, and of all planning on the side of the designers.

In the 'evoking' of innovators in the FEEDBACK-project we focused primarily on a) the use of artefacts and b) the creating of safe but challenging situations. Starting with the latter much time has been used informing the families, via letters, e-mail, telephone conversations, websites, etc. about the purpose of the project, their role in the project, the expected outcome of the project, timeframe, and the amount of hours estimated for their participation. Every setting began with designers informing, and no materials were handed to the families without both verbal and written instructions. We wanted the families to feel safe when taking the unfamiliar role of innovators. We worked hard on making sure, that they always knew, what they were going to participate in, for how long, with who, where, etc. Entering the homes we made an effort to respect the privacy of the family home by creating a 'public space' at the dinner table – the place where most families meet guests.

At the same time we worked on making the design-settings challenging for the families. For this purpose we used artefacts especially to trick their memory and imagination – to evoke them as innovators: In order to 'tune-in' on the subject – electricity consumption – we created a card-game called "EnergyPower". It was a game with 52 cards with different pictures of electrical appliances (toasters, lamps, TVs, computers, etc.) and among these 5 trumps being

pictures of things which used no electricity at all (candles, oil lamps, etc.). The cards were distributed among the family members. All the participants, one at a time, would throw a card on the table, and the one with the least electricity consuming appliance (the most "EnergyPower") would take the points. Playing "EnergyPower" required the families to reflect on what they actually knew about electricity use both in general and in relation to concrete appliances at the cards and in their own household. Within 15 minutes or so they were 'tuned in' on the subject and wanted to learn more.

Fig. 5: The logo for the "EnergyPower" card-game.

After the card game the families were given a Polaroid-camera and asked to take 10 photographs of places in their home, where they would like more information about their electricity consumption. Most families split up in two teams taking 5 pol-photos each. After this photo-tour the family members returned to the dinner table. They took turns presenting photographs and jutting down one sentence explaining what information they were seeking or thinking of when taking the photographs. The exercise was challenging in that it forced the families to reflect on their habits and needs, but also to come up with ideas for information about electricity consumption.

Fig. 6: Sample of polaroid-photos with written questions.

Similarly, the concept prototypes were handed over and explained in detail at the dinner table, but the families installed them themselves, when we had left. We appointed a person (the father, the mother, the one who returned first to the house every day, etc.) to be responsible for changing 'screens' in the mock-ups, testing if they were still in their place, etc. In order to trick reflection we developed a probe kit for every family. Main part of the probes consisted of postcards with questions that the family members were to answer and send to us on specific week-days. The point being to keep them focused. Some family members reflected a lot and wrote long descriptions of their habits and experiences. Other family members, especially the kids, used to post-cards as sign of participation – making drawings or just saying "Hallo".

Fig. 7: Post-cards returned during the concept-exploration. Some with drawings, others with longer reflections.

The design-workshop which was the last iteration, in which the innovators participated, was situated at the university and planned in detail with a tight time-schedule in order to respect the families spare time (they used their weekends on the design project). Again information had been given to the families in advance. At the workshops we made an effort to make them feel 'at home', but also to make them feel challenged. Their design spirit was evoked when we aksed them to present positive and negative critique of the concept-prototypes they had lived with for a week. We mixed the teams to maximize common interest and diversity of experience with prototypes. This first part of the workshop, where they shared and discussed experiences, made people feel eager to contribute to the next part, where they made prototypes themselves. Two/four families were working together at the workshops. Three prototypes were developed, quite different from our initial ideas when starting the project in January 2006 both in relation to the choice of media/hardware and in relation to the information and user-interface design.

Fig. 8: Innovators in a design-workshop making a mock-up of an information system for electricity consumption in private households.

CONCLUSION

In this paper we have reported as our findings from the FEEDBACK-project, that

a. people openly interested in re-arranging their environment and its technology, and not 'stuck' with too much experience, make excellent innovators

b. artifacts as design materials to hold, to handle, to give and take, and manipulate stimulate creativity, when the setting is right, which is when the innovators feel at home, safe, but challenged to play.

To conclude our presentation of lessons learned from the FEEDBACK-project with respect to selecting and evoking innovators, we return to the issue of phronesis as a deep value in the tradition of Scandinavian systems design: a value we understand as designers' strive to serve the common good and avoid harming peoples' possibilities to develop a life of their own. User-driven innovation as described here appears to us to be (part of) a road to this goal. We see the innovators' design work in the FEEDBACK-project, as experiential learning the way Kolb has described it [24]. Kolb put the emphasis on integration of personal experience and handed down experience as the way to prepare the learner to move from one state of competence to the other. Kolb suggests this integration to be shaped as guided shifts between externalization and internalization of experience: *'learning, and therefore knowing, requires both a grasp or figurative representation of experience and some transformation of that representation. Either the figurative grasp or operative transformation alone is not sufficient. The simple perception of experience is not sufficient for learning; something must be done with it. Similarly, transformation alone cannot represent learning, for there must be something to be transformed, some state or experience that is being acted upon.'* [24]. Based on this description we define 'the 'phronetic touch in design' as 'grounding a form in the practice of its users *and* opening trajectories for future users' future learning'. As stated in the beginning we subscribe to Dewey's view that the best democracy is a democracy, which is constituted to maximize the common good, and to the opportunity to combine democracy and creativity. According to Yang [38] Dewey [10] argued that the gulf between production and consumption following industrialism deprived humans of creativity and reduced production to mere drudgery. We are not sure that user-driven innovation as a form of production is doing away with drudgery, things are still manufactured the industrial way, no matter how lean the production chain, but the kind of user-involvement we have described here do represent a playground where using and producing come together, and things and activities make more meanings and more perceptions, which is what Dewey found the hallmark of creativity.

If we step back and take a look at this description, we can see the contours of three archetypical patterns of behaviour related to design:

- Christopher Alexander's description of the unselfconscious designers [1] who maintain quality by taking away the bad exemplars
- the Japanese Wabi Sabi tradition [25] according to which good design is design based on the materials at hand
- the court chester institution, which allows otherwise untellable truths to be told

All of these are examples of a design space, characterized by a certain familiarity and a certain estrangeness: a bad exemplar, a lack of necessary material, a dangerous truth, are disturbances which creates a need to restore harmony, which calls for action, and generates 'more meanings and more perceptions', in case the conditions are right and people can do something about it. In the user-driven design workshop in the FEEDBACK-project the innovators felt sufficiently disturbed to want to do something, to design, and we provided them with means, and they were selected, because they were 'doers', so they did in fact come up with design concepts.

We think that what is behind the immediate how-to's that we have derived from other researcher's work and from our own research is a deeper truth about the connection between democracy and creativity. Those who are most suited to rearrange their environment are those who can, those who take a pleasure in doing so, and those who get the opportunity. The first two points are relevant when screening for innovative potential, the latter point is relevant in order to remind designers to give innovators opportunity – space – to innovate and to make an effort evoking their innovative potential.

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